UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/669,507	09/25/2003	Satoru Yamaguchi	461-148	4573

23117 7590 10/29/2004

NIXON & VANDERHYE, PC
1100 N GLEBE ROAD
8TH FLOOR
ARLINGTON, VA 22201-4714

EXAMINER	
RAO, G NAGESH	
ART UNIT	**PAPER NUMBER**
1722	

DATE MAILED: 10/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/669,507	YAMAGUCHI ET AL.
	Examiner	Art Unit
	G. Nagesh Rao	1722

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☐ Claim(s) _____ is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-12 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1, 5-7, and 9-12 rejected under 35 U.S.C. 103(a) as being anticipated by Ito (US Patent No. 5,607,636 A) in view of Inoguchi (US Publication 2003/0098530).

Ito 636 teaches a method of producing plexifilamentary fiber from an extrusion apparatus where the material is able to be mixed and guided toward a molding die. It is comprised of shaft with a screw on a first lead that has a surface means for

pressing said mixture compound (figure 8 element 21) through the extruder (an equivalent to claimed pressing screw part) with a rear lead with multiple threads forming a spiral ridge. Ito's screw extruder apparatus has the ability to knead and guide material toward a molding die.

Ito 636 extruder apparatus is an example shown to be used in the production of polymer fibers but does not teach the production of ceramic molded materials.

Inoguchi teaches a production method for ceramic structures including honeycombed structures. The apparatus shown in figure 1 of Inoguchi is a screw extruder (element 1) that has a molding die (element 8) used to form a ceramic molding, containing an extrusion screw (element 15) that processes said material toward die (element 8).

With respect to claim 1 as seen in Inoguchi, there is an extrusion screw apparatus with a lead screw and back screw containing a spiral ridge each having a shaft body and parallel from one another allowing for a gap to be present between first and second extruder screws (figure 1). It would be obvious with skill in the art to modify Ito's screw apparatus to handles ceramic mold mixtures as indicated in Inoguchi.

With respect to claims 5 and 6, Inoguchi teaches the production method of ceramic honeycombed structures where partitioning walls are no thicker than 150

microns which is inclusive of the 100 micron barrier stated in applicant's claimed invention (see claim 11).

With respect to claim 7, figures 6-8 of Ito 636 shows an extrusion molding apparatus.

Ito 636 teaches a method of producing plexifilamentary fiber from an extrusion apparatus where the material is able to be mixed and guided toward a molding die. It is comprised of shaft that is coaxial to a "dulmage" screw part as a first lead with multiple threads in a spiral manner rotating integrally with its shaft body (figure 6 element 16) similar to that of the "diffusion screw part" in said claimed invention, the screw in Ito has a surface means for pressing said mixture compound (figure 8 element 21) through the extruder (an equivalent to claimed pressing screw part) with a rear lead with multiple threads forming a spiral ridge. Ito's "dulmage" screw part is of greater diameter to that of its "pressing screw part" (figures 6 and 7). Ito's screw extruder apparatus has the ability to knead and guide material toward a molding die.

Ito 636 extruder apparatus is an example shown to be used in the production of polymer fibers but does not teach the production of ceramic molded materials. This invention would read on Ito's extrusion apparatus when in combination with Inoguchi's method of production. The motivation for using Ito's art in ceramic

extrusion is due to its success and physical appearance to modify and handle such a rigorous material.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

1. Claims 1-12 provisionally rejected under the judicially created doctrine of double patenting over claims 1-16 of copending Application No. 10/669599. This is a provisional double patenting rejection since the conflicting claims have not yet been patented.

The subject matter claimed in the instant application is fully disclosed in the referenced copending application and would be covered by any patent granted on that copending application since the referenced copending application and the

instant application are claiming common subject matter, as follows: First an apparatus related to ceramic molded extrusions is claimed in both applications, second the designs of both systems are very similar with respect to the drawings in the specification, third the application 669,599 appears to anticipate the language claimed in application 669,507.

For example Claim 1 of application 669,507 states the following: "An extrusion molding apparatus for a ceramic molded product, comprising a shaping die for producing a ceramic molded product and a screw extruder having built therein an extruding screw for mixing and leading a ceramic material forward, wherein said extruding screw includes a pressing screw portion for pressing said toward said shaping die and a dispersing screw portion arranged on the same axis as said pressing screw portion adjacently to the forward end of said pressing screw ceramic material portion, wherein said pressing screw portion assumes the shape of a ridge spirally formed in an axial direction and includes at least one thread of a first lead having a first lead surface facing forward, wherein said dispersing screw portion assumes the shape of a ridge spirally formed in an axial direction and includes at least one thread of a second lead having a second lead surface facing forward, and wherein a gap is formed in a peripheral direction between the rear ends of all of said second lead surfaces at the rear end of said dispersing screw

portion and the forward end of said first lead surface at said forward end of said pressing screw portion."

Whereas claim 1 of application 669,599 states the following: "An apparatus for extruding a ceramic molding, comprising a molding die, to form a ceramic molding, and a screw extruder containing an extrusion screw to knead and guide a ceramic material toward the molding die, wherein said extrusion screw has a pressure screw part provided with a first lead of a single thread or more than one thread in the form of a spiral ridge, on an outer peripheral surface of a first shaft body and, on its front end, a diffusion screw part coaxial to the first shaft body and provided with a second lead of a single thread or more than one thread in the form of a spiral ridge on an outer peripheral surface of a second shaft body which rotates integrally with the first shaft body, said diffusion screw part having a screw diameter larger than that of the pressure screw part."

Application 669,507 appears to be a more broader version of application 669,599 and it appears that the pertinent information could be inferred from either co-pending application.

Furthermore, there is no apparent reason why applicant would be prevented from presenting claims corresponding to those of the instant application in the

other copending application. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

Double Patenting

2. Claims 1-12 rejected under the judicially created doctrine of double patenting over claims 1-13 of U. S. Patent No. 6,790,025 B2 since the claims, if allowed, would improperly extend the "right to exclude" already granted in the patent.

The subject matter claimed in the instant application is fully disclosed in the patent and is covered by the patent since the patent and the application are claiming common subject matter, as follows: First an apparatus related to ceramic molded extrusions is claimed in both applications, second the designs of both systems are very similar with respect to the drawings in the specification, third US patent 6,790,025 B2 appears to anticipate the language claimed in application 669,599.

For example Claim 1 of US Patent 6,790,025 B2 is the following: "An extrusion molding apparatus comprising a housing, the housing including a screw built into the housing, a ceramic material being introduced into the housing and extruded by way of a forward end extrusion port by rotating the screw, wherein: the screw includes a pressure portion, an extended portion arranged on a forward end extrusion port side of the pressure portion, and a kneading portion arranged

between the pressure portion and the extended portion for kneading the ceramic material; and the pressure portion has a feed rate per revolution which progressively decreases toward the forward end extrusion port, and the extended portion has a feed rate per revolution which progressively increases toward the forward end extrusion port."

Claim 1 of application 669,507 states the following: "An extrusion molding apparatus for a ceramic molded product, comprising a shaping die for producing a ceramic molded product and a screw extruder having built therein an extruding screw for mixing and leading a ceramic material forward, wherein said extruding screw includes a pressing screw portion for pressing said toward said shaping die and a dispersing screw portion arranged on the same axis as said pressing screw portion adjacently to the forward end of said pressing screw ceramic material portion, wherein said pressing screw portion assumes the shape of a ridge spirally formed in an axial direction and includes at least one thread of a first lead having a first lead surface facing forward, wherein said dispersing screw portion assumes the shape of a ridge spirally formed in an axial direction and includes at least one thread of a second lead having a second lead surface facing forward, and wherein a gap is formed in a peripheral direction between the rear ends of all of said second

lead surfaces at the rear end of said dispersing screw portion and the forward end of said first lead surface at said forward end of said pressing screw portion."

There is nothing novel or apparent in claim 1 of application 669,599 that could not be taught or inferred from US Patent 6,790,025 B2 which also happens to have the same inventor.

Furthermore, there is no apparent reason why applicant was prevented from presenting claims corresponding to those of the instant application during prosecution of the application which matured into a patent. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to G. Nagesh Rao whose telephone number is (571) 272-2946. The examiner can normally be reached on 9AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Benjamin Utech can be reached on (571) 272-1137. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

GNR

BENJAMIN L. UTECH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700